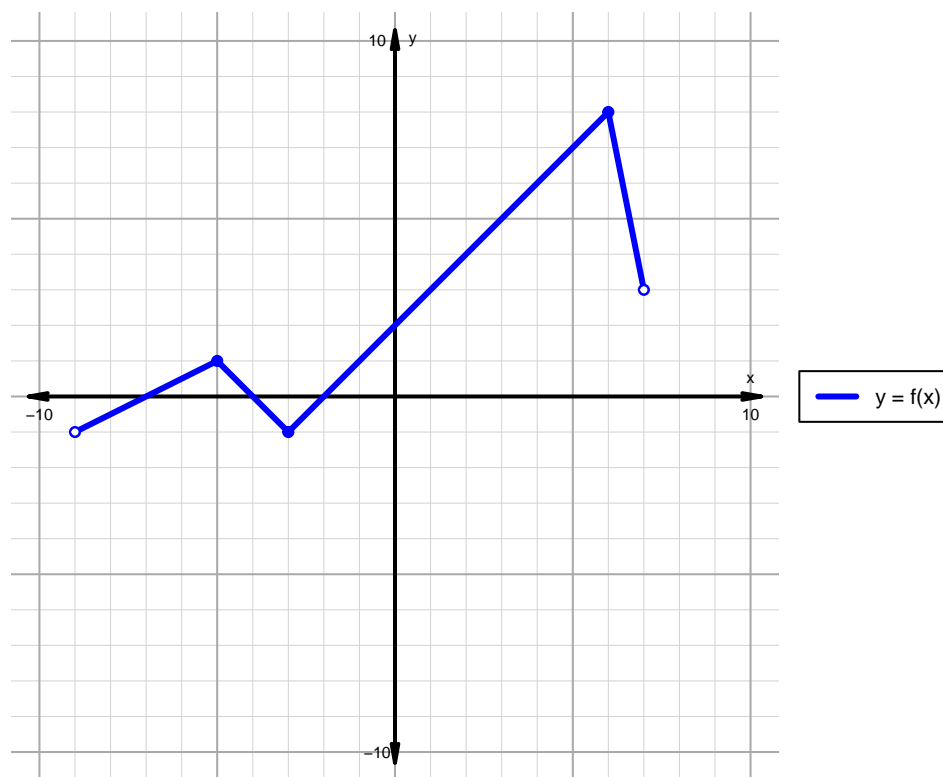


Name: \_\_\_\_\_

Date: \_\_\_\_\_

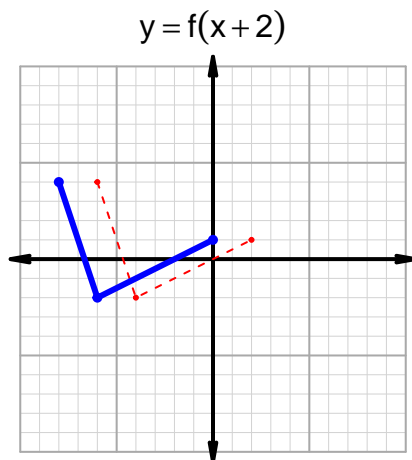
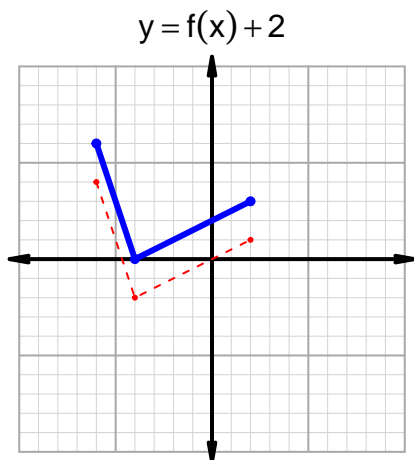
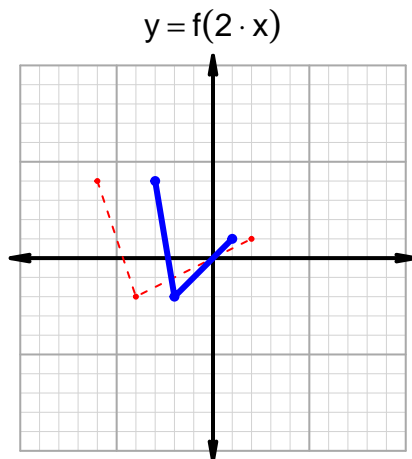
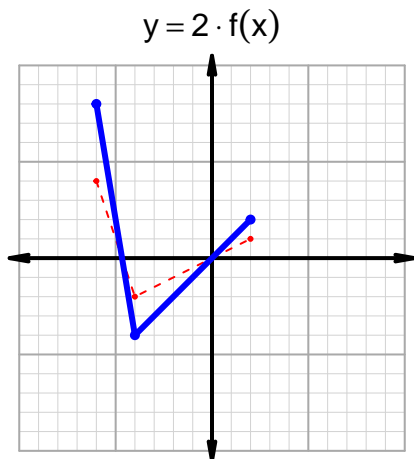
**Intervals, Transformations, and Slope Solution (version 2)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-7, -4) \cup (-2, 7)$
Negative	$(-9, -7) \cup (-4, -2)$
Increasing	$(-9, -5) \cup (-3, 6)$
Decreasing	$(-5, -3) \cup (6, 7)$
Domain	$(-9, 7)$
Range	$(-1, 8)$

## Intervals, Transformations, and Slope Solution (version 2)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 94$  and  $x_2 = 98$ . Express your answer as a reduced fraction.

$x$	$g(x)$
46	94
56	98
94	56
98	46

$$\frac{f(98) - f(94)}{98 - 94} = \frac{46 - 56}{98 - 94} = \frac{-10}{4}$$

The greatest common factor of -10 and 4 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-5}{2}$$